

Remarks/Arguments:

Claims 1-8 are pending in the above-identified application. Claims 7 and 8 have been withdrawn from consideration by the Examiner. With this amendment, dependent claims 2 and 5 have been added to independent claims 1 and 4, respectively, and claims 2 and 5 have been cancelled. Accordingly, claims 1, 3-4 and 6 are presented for reconsideration.

Claims 1 and 4 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,402,013 (hereinafter "Abe") in view of U.S. Patent No. 4,749,120 (hereinafter "Hatada") and vice versa. Claims 2 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Abe/Hatada or Hatada/Abe and further in view of U.S. Patent No. 6,521,997 (hereinafter "Huang"). Claims 3 and 6 stand rejected under 35 U.S.C. § 103(a) as being obvious over Abe/Hatada or Hatada/Abe and further in view of U.S. Patent No. 5,726,861 (hereinafter "Ostrem"). Applicants respectfully traverse these rejections for the reasons set forth below.

Applicants wish to thank Examiner Nguyen for conducting a telephonic interview with the Applicants' representatives on April 16, 2010. During this interview differences between the invention and the applied prior art references were discussed. Claim amendments were presented and these claim amendments will be further discussed in the Applicants' response below. Agreement was reached that amending claim 1 to include claim 2 and additional language, as well as amending claim 4 to include claim 5 and additional language would overcome the cited prior art of record. The Examiner indicated, however, that such changes would require further search and/or consideration.

Abe discloses a soldering paste to an area to be soldered. This soldering paste is then heated to solder the electrical component. Hatada describes using resin to attach a semi-conductor device. This resin is applied to either the circuit board or the semi-conductor device and then spreads out through the use of pressure as described in column 3, lines 60-66. Huang discloses a chip carrier with a pair of spaced apart solder gaps protected on their ends by a recessed portion 13. Recessed portions 13 have a gap 16 between them. Ostrem discloses a height control pad disposed onto the substrate positioned apart from the electrical connection pads.

... the adhesive supplying step is characterized by supplying the adhesive to the electrode, and also supplying the adhesive to an adhesion reinforcing portion determined between the pair of electrodes on the substrate, **the adhesion reinforcing portion is formed on the surface of the substrate, extends contiguously between and partly overlaps the pair of electrodes to prevent short circuiting of the pair of electrodes**, and the portion other than the electrodes is set on a concave resist film, and the solder part is held in the concave portion ... (Emphasis Added)

As discussed during the Examiner interview, neither Abe nor Hatada disclose or suggest a piece of resist film being used as an adhesion reinforcing portion extending contiguously between and partly overlapping the pair of electrodes to prevent short circuiting. Huang discloses in Fig. 3A recessed portion 13 which partly overlaps the electrodes 12. This recessed portion 13, however, does not extend contiguously between the two electrodes and intentionally leaves passage 16 between them.

Applicants' claimed invention is different from the Huang because the purpose of Huang is to create passage 16 in which encapsulating resin is able to smoothly flow through the passage as described in Huang, column 3, lines 46-49. Rather, in the present invention, the recessed film 3 extends contiguously between the two electrodes.

It is because Applicants include the feature of an adhesion reinforcing portion formed on the surface of the substrate extending contiguously between and partly overlapping the pair of electrodes, that the following advantages are achieved. This feature prevents the solder lumps 6B that are formed after the adhesion reinforcing part is melted from contacting the pair of electrodes 2 and thereby short circuiting the component. Accordingly, for at least the reasons set forth above, claim 1 is patentable over the art of record.

Claim 3 includes all of the features of claim 1 from which it depends. Thus, claim 3 is also patentable over the art of record for at least the reasons set forth above.

Independent claim 4, while not identical to claim 1, includes similar features to those in claim 1. Accordingly, claim 4 is also patentable over the art of record for at least the reasons set forth above with respect to claim 1. Claim 6 includes all of the features of claim 4 from which it depends. Thus, claim 6 is also patentable over the art of record for at least the reasons set forth above.

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In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



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